Daset2 Profile Editor ver. 1.0.xx

User Manual

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CONTENS

1. General information

Daset2 Profile Editor is an additional part of DaSet Tester and it is an application for creating the measurement profile used in DaSeT tester. This application has not any special hardware or software requirements.

The measurement profile is stored in a database (Microsoft Access 2003) called *MeasureProfile.mdb* and his additional settings are stored in a database called *SettingData.mdb*. The existence of these two databases is only one requirement for Daset2 Profile Editor.

The path to these databases is stored in ini file called *DaSeT2 Profile Editor.ini*. The default path is C:\Program Files\DaSet2\Databaza\. The installation of DaSeT Tester application automatically copies these databases to default directory.

2. The user inferface

The user interface of Daset2 profile Editor is very similar to Microsoft Office applications. The main menu consists of general items (such as File, Edit, View etc.) well known from other applications. The application is starting with new profile called Profile1.
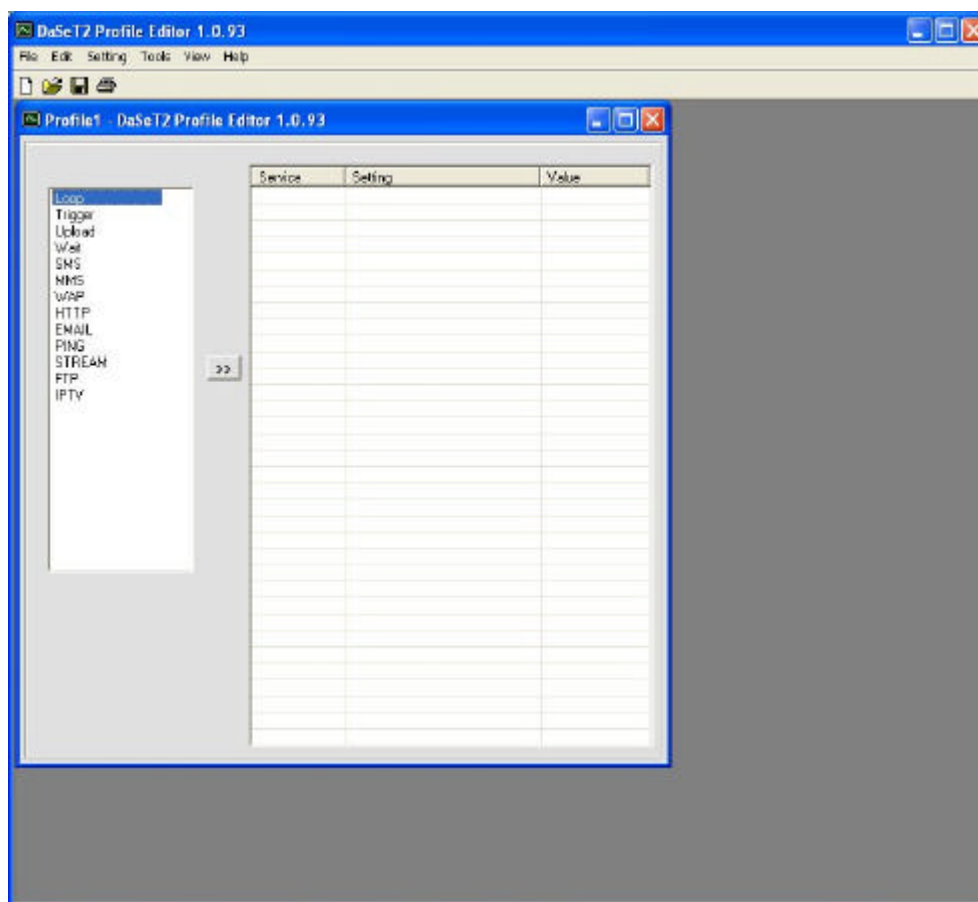
2.1   Brief description of Main Menu

File – consists of the general items for work with measurement profile.
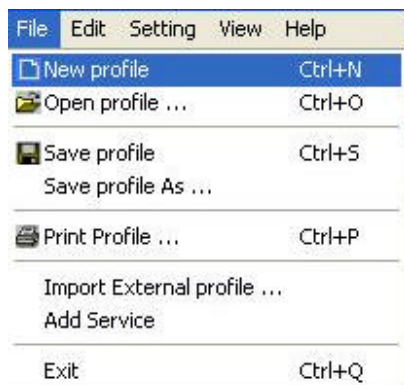
New Profile – create a new profile.
Open profile – open existing profile. The Open Profile dialog box will display.
Save profile – save current opening profile.
Save profile As – save profile under new name. The Save Profile As dialog box will display.
Print Profile – print profile.
Import External profile – import an external profile (existing profile in the same database) at the end of current editing profile.
Add Service – this item has a meaning for the Advanced View of application. (it will be explained later)
Exit – exit application

When you click on one of following items : Open, Save, Save As, Import external profile, the standard dialog box will display. The dialog box for all these items is very similar, there is a difference in a dialog caption and button's name.

The dialog box contains the list of existing profiles. You can rename or delete these profiles. The context menu with these options will display when you click on profile name with right mouse button.

**Edit** - consists of one item called "Replace COM port". The Replace COM port dialog box will display.
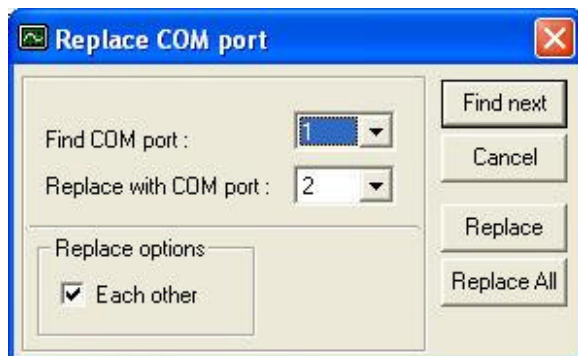
Replace COM port – replace found COM port with defined COM port in all services which use the COM port setting (SMS, MMS, connection etc). If "Each other" options is checked, then it means that the replace function is applied in the backward direction too.

Setting – Before creating measurement profile you can create or edit some settings to be used later in a profile. The individual settings (use and meaning) will be explained later. You are able to create profile without using this menu item.

Tools – contains item "Database management" consisting of three another items as you can see below.
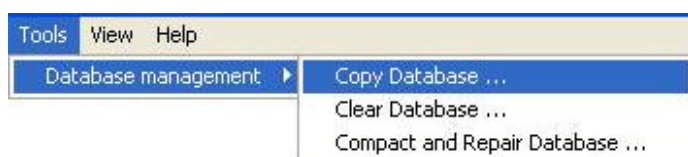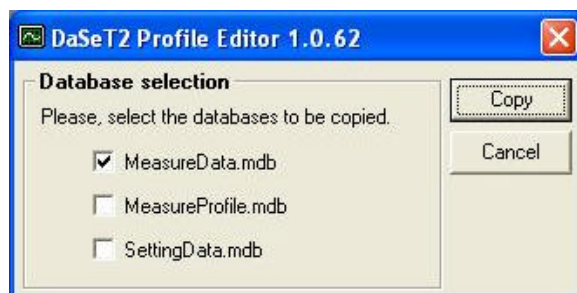
Copy Database – copy database into chosen folder.
Clear Database – delete all data from all tables of a database.
Compact and Repair Database – Microsoft Office Access has to be installed on you PC if you want to use this function.

Let us assume the item "Copy Database". The "Database Selection" dialog box will display.

You can apply this function to three different databases by their selection The whole path to these databases is stored in a file "DaSeT2 Profile Editor.ini". If you click on "Copy" button, the standard dialog box "Browse for Folder" will display.

View - choose between two lists of services you can use for creating the measurement profile. The default view is "Standard".
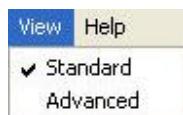
I recommend to use the standard view if you start working with a application. The standard view has the "limited" options of creating a measurement profile, but you can be sure that the created

profile will be correctly supported by DaSeT tester application. Most of the services in Standard view consists of several subservices as you will see later. Use the Advanced view if you have some experiences with creating profile and you know the steps order. For example "*MMS*" service consists of several steps such as delete all SMS stored in SIM card, send MMS from MSISDN1 to MSISDN2 etc.

Standard View   *Advanced View*
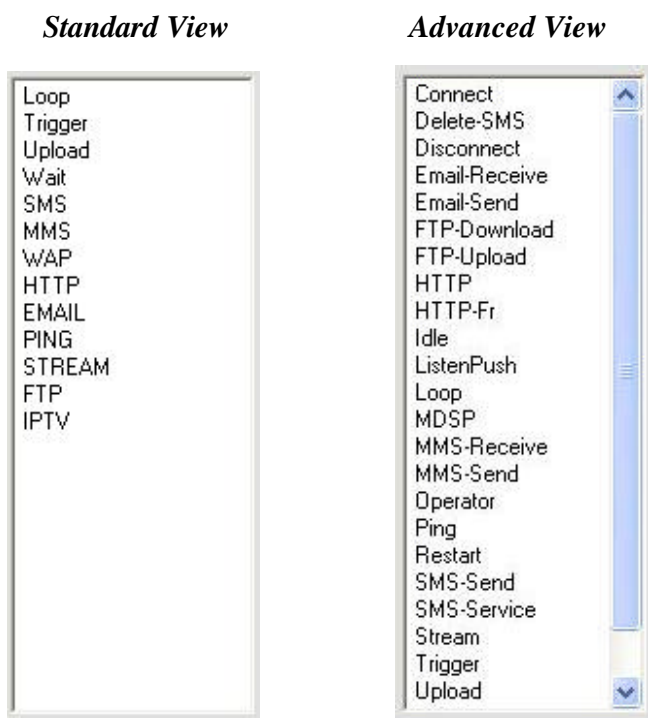
Help – informations about Daset2 Profile Editor.

3.   Creating the measurement profile

The application is starting with new profile called Profile1. There are two listviews on the page, the first listview on the left side contains list of services you can use. The result profile is displayed in the second listview on the right side. You can use a button between two listviews to move service from the left side to the right side. There is supported drag–and-drop function between two listviews too. Using the drag-and-drop functions is suitable if you don't want to add the service at the end of profile but to insert between two existing services. So now we can start to create your first measurement profile. First, we will explain all services (use and meaning) in the left listview.

3.1   Description of services in Standard View

TRIGGER

It is usually the first service of the measurement profile. You can define how often the measurement profile is repeated.
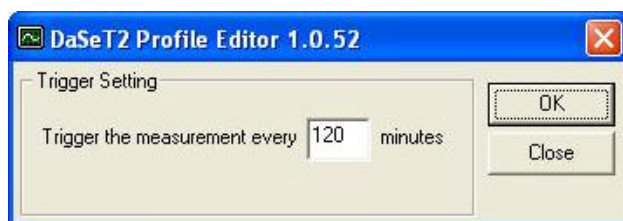

When you set up number of minutes and click on OK button you can see that the listview on the right side contains the first service. The first column indicates the service name, the second the setting and the third value. You can edit this service with double-click of left mouse button any time.

LOOP

It is the the last service of the measurement profile. Without this service, the measurement profile runs only once. Use it if you want the measurement profile to continue from the beginning.
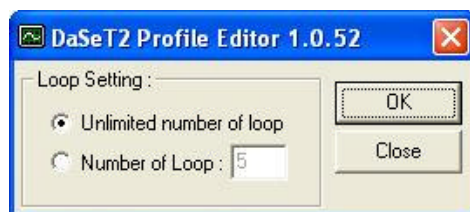

You have two options :

1. *Unlimited number of loop* – the measurement profile is repeated unlimited.
2. *Number of Loop* – the measurement profile is repeated x-times.

After click on OK button you can see following. You can edit this service with double-click of left mouse button any time.

WAIT

The function of this service is only wait defined time. Then the measurement profile continues with next service.
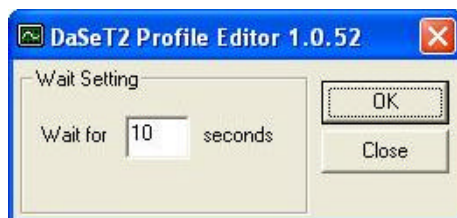
If you use the drag-and-drop function for inserting "*wait*"service between "*Trigger*" and "Loop" service and click on OK button you can see following. You can edit this service with double-click of left mouse button any time.

Service	Setting	Value
Trigger	Every 2 hours	(12/day)
Wait		10 seconds
Loop		unlimited

UPLOAD

Upload the measurement data from local database to remote oracle database (it's located on Slovak server).

The data is automatically stored in local database. If you want to use this service in your profile you must have an access to remote database. This service is automatically added into profile without prompting for approval.

Service	Setting	Value
Trigger	Every 2 hours	(12/day)
Wait		10 seconds
Upload		Each times
Loop		unlimited

SMS

Send SMS from one COM port to other COM port. The "SMS Service Setting" dialog box will display.
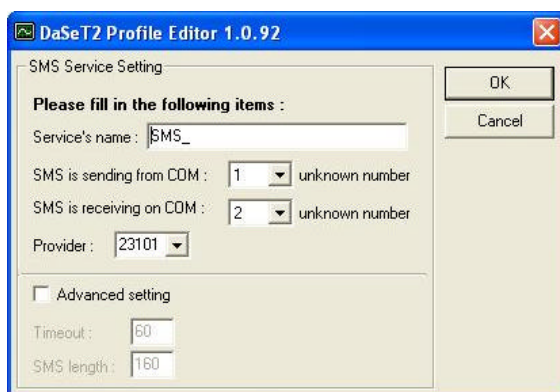
You can set up several items in this dialog box:

> *Service's name* – service's name. You can find this setting (with this name) in main menu Setting/ SMS-Send Setting
> *SMS is sending from COM* – COM port number for sending SMS
> *SMS is receiving on COM* – COM port number for receiving SMS
> *Provider* – MMC+MNC network code (23101 for Orange Slovakia)
> *Timeout* – timeout for receiving SMS. Default value is 60 seconds
> *SMS length* – length of sms message. Default value is 160 chars.

Also you have to set up the MSISDN for both COM ports. The "*SMS*" service will not work correctly without these settings. **The text "unknown number" can not appear next to Combobox for COM ports !!!.** You can use "Operator Setting" in main menu "Setting" or click on text "unknown number" to edit MSISDNs. The "Operator Setting" dialog box will display.
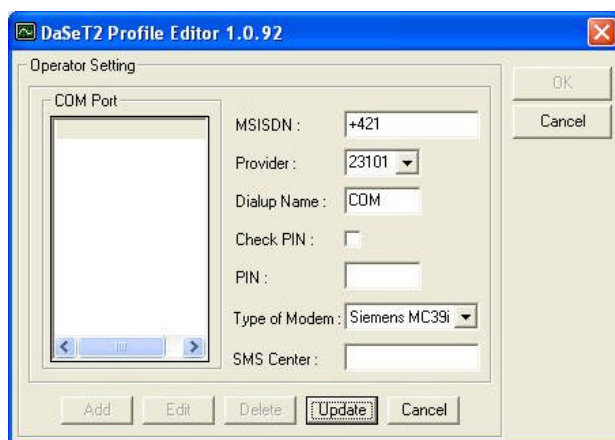
There are several items you can set up :

>   ***COM port*** - COM port number (1,2, …)
>   ***MSISDN*** - the phone number in international format (recommended)
>   ***Provider*** - MMC+MNC network code (23101 for Orange Slovakia)
>   ***DialUp Name*** – DialUp name using COM port number **"*x*"** for connecting to network.
>   (DialUp name COM1 for connection using COM port 1)
>   ***Check PIN*** – PIN control enabled (checked) or disabled (optional if PIN disabled)
>   ***PIN*** – a personal identification number corresponding to MSISDN item.
>   (optional if PIN disabled)
>   ***Type of Modem*** – specifies the type of used modem. There are several options, *Siemens MC39i* and *Sagem OT 190* for GSM network (only GPRS services) , *3G AirCard, 3G Huawei* and *3G Merlin* for UMTS network (EDGE, 3G or HSDPA services).
>   ***SMS Center*** – the number of SMS center. (optional parameter)

There is necessary to know which modem is used because every modems uses different AT command set for sending SMS.

Press "F2" key to edit COM port item (First, you have to click on "Add" or "Edit" button).

When you click on OK button in "SMS Service Setting" dialog box you can see following.

Wait		10 seconds
Delete-SMS	COM 2	
Wait		2 seconds
SMS-Send	SendTo : +421905012559 From : +421905012607	60 (COM1) To (COM2)

You can see that "SMS" service consists of four services :

1. **Wait** (optional)
2. **Delete-SMS** (delete all SMS stored in COM port receiving SMS)
3. **Wait** (optional)
4. **SMS-Send**

All these services are available in **"Advanced"** view. You can edit (or choose another existing setting) these services with double-click of left mouse button any time.

MMS

Send MMS from one COM port to other COM port. The "MMS Service Setting" dialog box will display.

You can set up several items in this dialog box:

> ***Service's name*** – service's name. You can find this setting (with this name) in main menu Setting/ MMS-Send Setting and MMS-Receive Setting
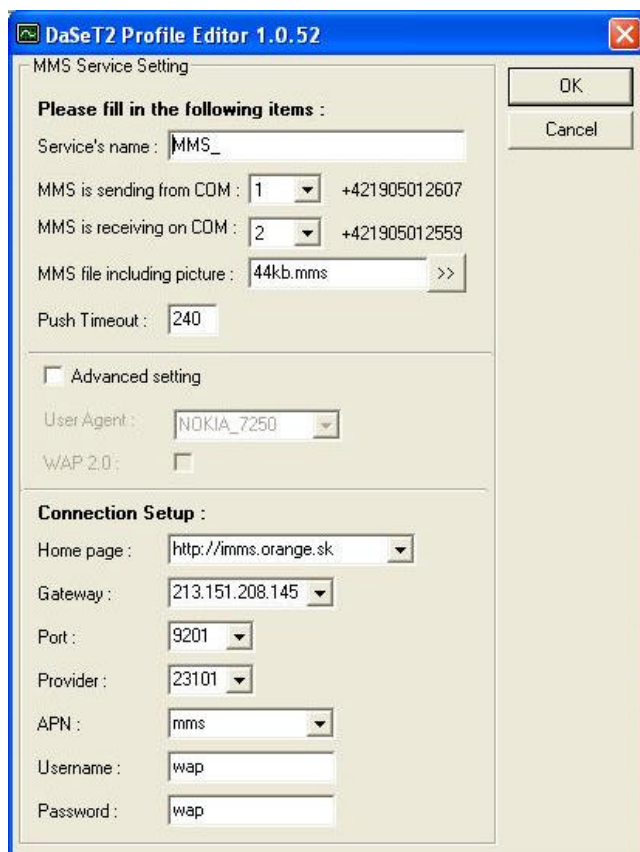> ***MMS is sending from COM*** – COM port number for sending MMS
> ***MMS is receiving on COM*** – COM port number for receiving MMS
> ***MMS file including pictur*e –** MMS template stored in "c:\Program Files\DaSet2\MMS"
> ***Push Timeout*** – timeout for receiving push SMS. Default value is 240 seconds.
> ***User Agent*** – user agent to be used for sending and receiving MMS
> ***WAP 2.0*** – enabled or disabled

Also there is necessary to define MMS connection setup (Home page, Gateway, Port, Provider, APN, Username, Password). Be carefully, **text "unknown number" can not appear next to Combobox for COM ports !!!.** You can use "Operator Setting" in main menu "Setting" or click on text "unknown number" to edit MSISDNs.

When you click on OK button in "MMS Service Setting" dialog box you can see following (listview on the right side).

Wait		10 seconds
Delete-SMS	COM 2	
Connect	+cgdcont=1,"IP","mms" (MMS__Send : *99***1#)	COM1 (23101)
MMS-Send	SendTo : +421905012559 From : +421905012607	NOKIA_7250 (COM1) To (COM2)
Disconnect		(23101)
Wait		20 seconds
Connect	+cgdcont=1,"IP","mms" (MMS__Rec : *99***1#)	COM2 (23101)
MMS-Receive	Receive : +421905012559	NOKIA_7250 (COM2)
Disconnect		(23101)

You can see that "MMS" service consists of nine services :

1. **Wait** (optional)
2. **Delete - SMS** (delete all SMS stored in COM port for receiving SMS)
3. **Connect** (connect to network using COM port number for sending MMS)
4. **MMS - Send**
5. **Disconnect** (disconnect from network)
6. **Wait** (wait for PUSH SMS)
7. **Connect** (connect to network using COM port number for receiving MMS)
8. **MMS - Receive**
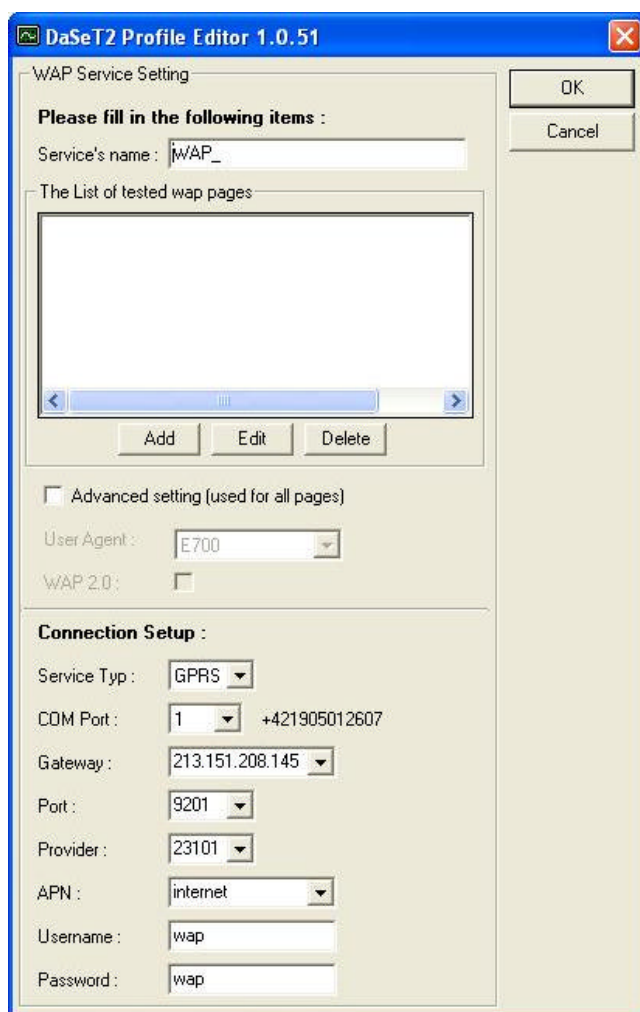9. **Disconnect** (disconnect from network)

These all services are available in **"Advanced"** view. You can edit (or choose another existing setting) all these services (except for disconnect) with double-click of left mouse button any time. **You have to create** (if not exist) **a new dial-up connection with name COM1 (connect using modem attached to COM1) and COM2 (connect using modem attached to COM2) !!!**

Also you can edit (add or delete) :

"connect" service in main menu Setting/ Connection Setting,
 "MMS - Send" service in Setting/ MMS – Send Setting and
"MMS - Receive" service in Setting/ MMS – Receive Setting.

WAP

The measurement of access to defined wap pages (one or more). The connection setup will be used for creating the connection to network. The "WAP Service Setting" dialog box will display.

You can set up several items in this dialog box:

*Service's name* – service's name. You can find this setting (with this name) in main menu Setting/ WAP Setting. The same name is used for both "WAP" and "Connection" service.

The list of tested wap pages – the list can contain one or more url in a format **http://wap.**

User Agent – user agent to be used to access and display wap pages

WAP 2.0 – access with wap 2.0 browser (the item is checked)

When you click on "Add"or "Edit" buttun, the standard dialog box will display.
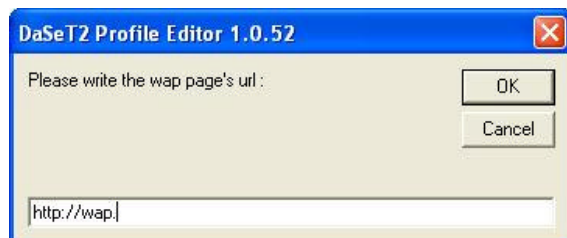
Also you have to define "Connection Setup". There are a several items :

Service type – GPRS or CSD
COM port – COM port number to be used for connection (dial-up using this COM port)
APN or **Dial-up number** – APN for GPRS type and Dial-up number for CSD type
Gateway, Port, Provider, Username, Password

You can see the MSISDN next to COM port number. In this case (WAP service), it is not necessary to define MSISDN for COM ports, but it is recommended (for visual control). Use "Operator Setting" in main menu "Setting" or click on text "unknown number" to edit MSISDNs. Let us assume that the list of tested wap pages consists of two URLs:

When you click on OK button in "WAP Service Setting" dialog box you can see following (listview on the right side).

You can see that "WAP" service consists of seven services :

1. **Wait** (optional)
2. **Connect** (connect to network with defined COM port number)
3. **WAP**
4. **Wait** (optional)
5. **WAP**
6. **Wait** (optional)
7. **Disconnect** (disconnect from network)

The number of services is depended on number of wap pages. There are five services (wait, connect, WAP, wait, disconnect) for one wap page
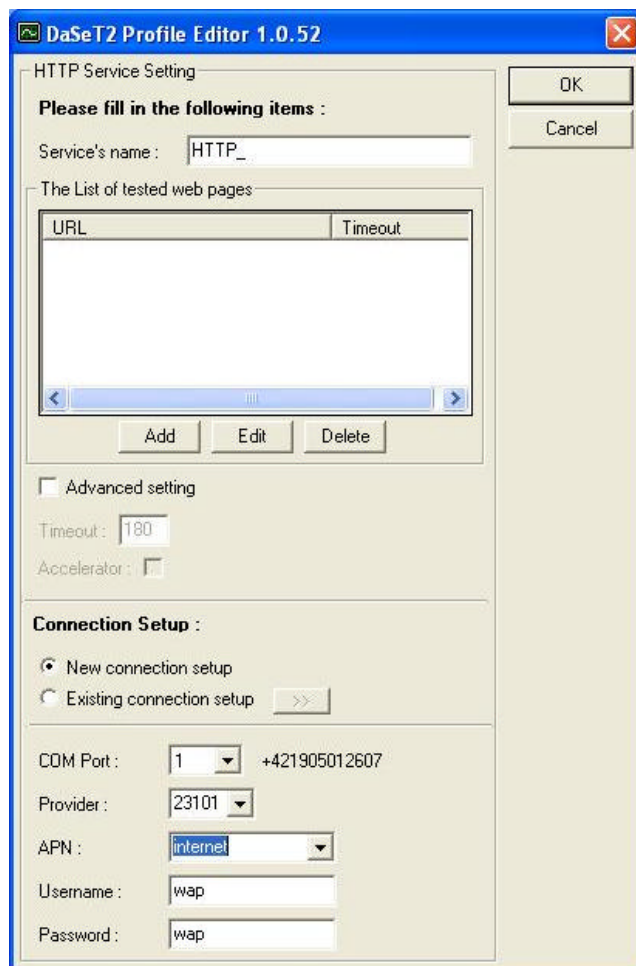
These all services are available in **"Advanced"** view. You can edit (or choose another existing setting) all these services (except for disconnect) with double-click of left mouse button any time. **You have to create** (if not exist) **a new dial-up connection with name COM1 (connect using modem attached to COM1) !!!**

Also you can edit (add or delete) :

"connect" service in main menu Setting/ Connection Setting and
 "WAP" service in Setting/ WAP Setting.

HTTP

The measurement of access to defined web pages (one or more). The connection setup will be used for creating the connection to network. The "HTTP Service Setting" dialog box will display.

You can set up several items in this dialog box:

> ***Service's name*** – service's name. You can find this setting (with this name) in main menu Setting/ HTTP Setting. The same name is used for both "HTTP" and "Connection" service (new connection setup).
>
> ***The list of tested web pages*** – the list can contain one or more URLs in a format **www.**
>
> ***Timeout*** – timeout for successful download
>
> ***Accelerator*** – access with web accelerator (the item is checked). It has to be supported by network provider.

When you click on "Add"or "Edit" button, the standard dialog box will display.
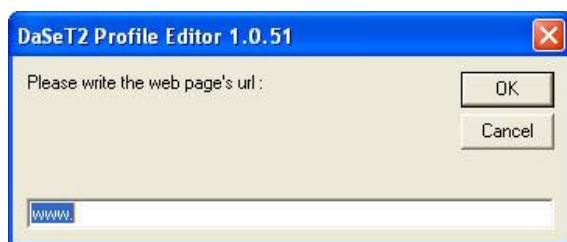
Also you have to define "Connection Setup". There are a several items :

> *COM port* – COM port number to be used for connection (dial-up using this COM port)
> *APN, Provider, Username, Password*

You have two options:

1. *New connection setup* – you are able to edit the items below
2. *Existing connection setup* – you aren't able to edit these items. Use ">>" button for choosing existing connection setup. The "Connection Setting" dialog box will display.
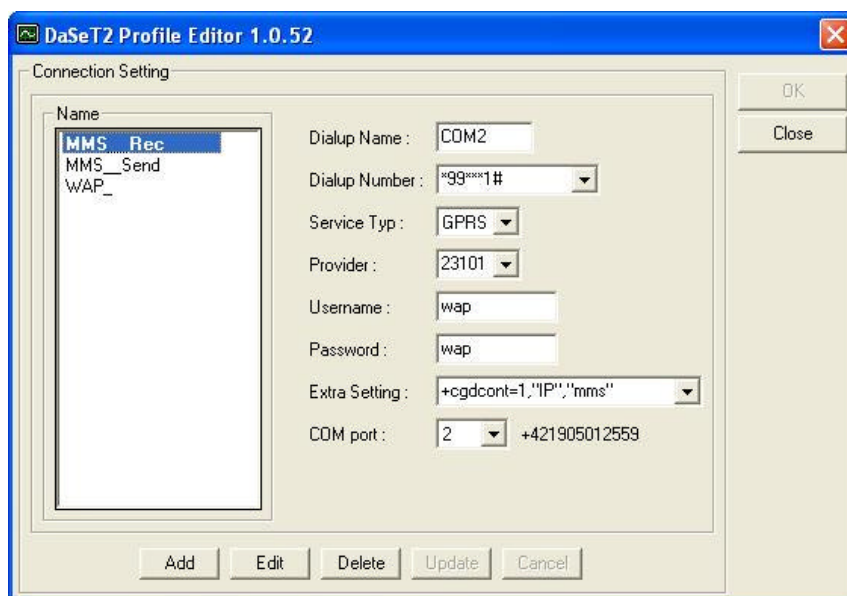
There are three connection settings created at "MMS" service (MMS__Rec, MMS__Send) and at "WAP" service (WAP_). There you can see details of connection setting.

The new items are :

> *Dial-up Name* – dial-up name to be used for connection (use Dial-up Name "COM1" to connect using COM port number "1")
> *Extra setting* - extra initialization command for modem including APN ("mms")

You can add, edit or delete (**be carefully, it could be used in profile !!!**) an individual connection setting with buttons in form. Press "F2" key to edit "Name" item (First, you have to

click on "Add" or "Edit" button). The "GPRS" service type usually uses " *99***1# " dial-up number.

Let us assume a new connection setup and the list of tested web pages with two URLs:
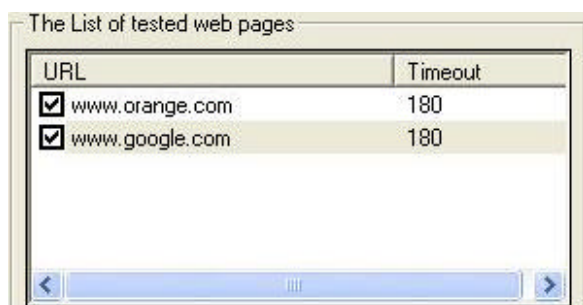
You can define by checkbox the web pages will be tested. When you click on OK button in "HTTP Service Setting" dialog box you can see following (listview on the right side).

You can see that "HTTP" service consists of seven services :

1. **Wait** (optional)
2. **Connect** (connect to network with defined COM port number)
3. **HTTP**
4. **Wait** (optional)
5. **HTTP**
6. **Wait** (optional)
7. **Disconnect** (disconnect from network)

The number of services is depended on number of web pages. There are five services (wait, connect, HTTP, wait, disconnect) for one web page
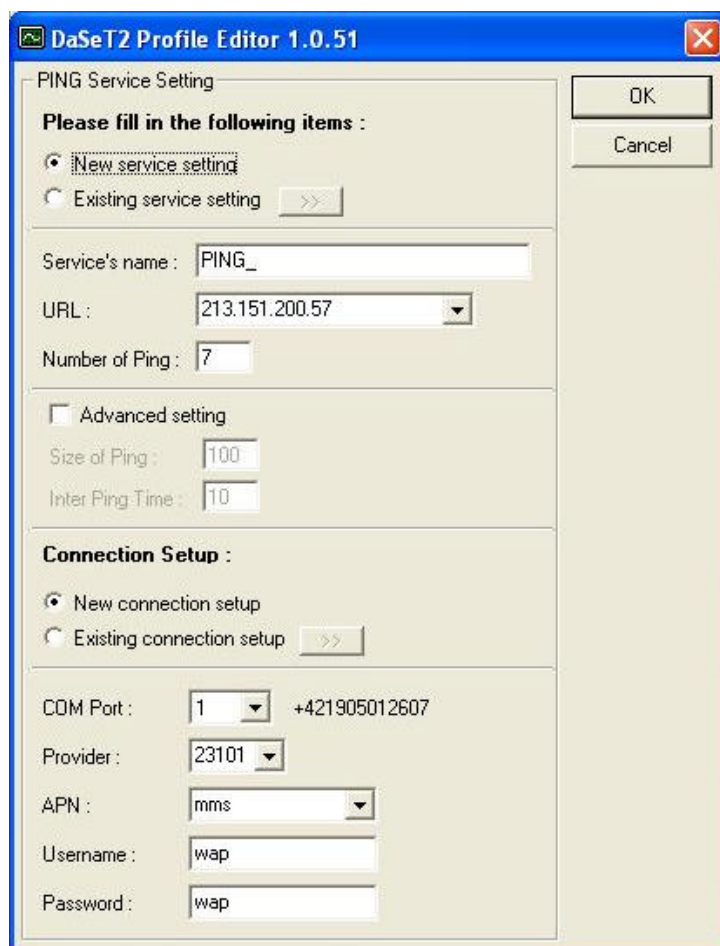
These all services are available in **"Advanced"** view. You can edit (or choose another existing setting) all these services (except for disconnect) with double-click of left mouse button any time. **You have to create** (if not exist) **a new dial-up connection with name COM1 (connect using modem attached to COM1) !!!**

Also you can edit (add or delete) :

"connect" service in main menu Setting/ Connection Setting and
"HTTP" service in Setting/ HTTP Setting.

PING

The measurement of the **R**ound-**T**rip **D**elay between DaSeT and any server that supports Ping. This function is not allowed in many networks. The connection setup will be used for creating the connection to network. The "PING Service Setting" dialog box will display.

You can set up several items in this dialog box:

> *Service's name* – service's name. You can find this setting (with this name) in main menu Setting/ PING Setting. The same name is used for both "PING" and "Connection" service (new connection setup).
>
> *URL* – server URL to be pinged
>
> *Number of Ping* – number of echo requests to send
>
> *Size of Ping* – Size of ping packet from 10 to 32000 bytes. (recommended 100 bytes)
>
> *Inter Ping Time* - Pause between two pings in ms. (recommended 1000 ms)

You have two options:

1. *New service setting* – you are able to edit the items in form
2. *Existing service setting* – you aren't able to edit these items. Use ">>" button for choosing existing service setting. The 'PING Setting" dialog box will display.
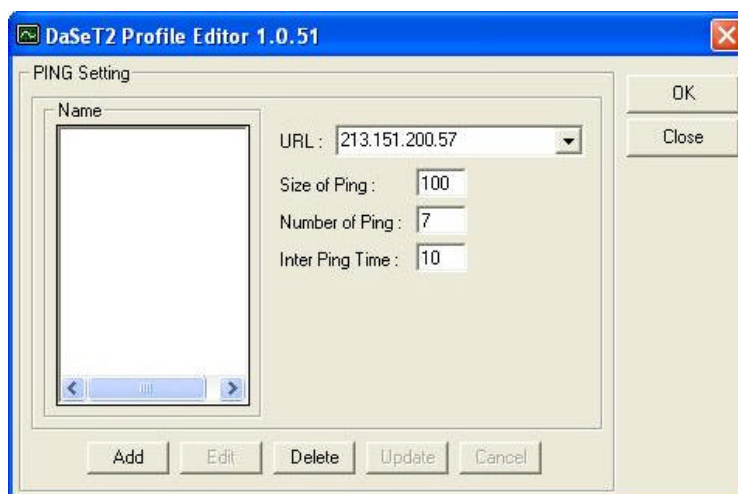
Now, there is no PING Setting. There are the same items for editing as in the previous dialog box. Press "F2" key to edit "Name" item (First, you have to click on "Add" or "Edit" button).

Also you have to define "Connection Setup" (see "HTTP" service).

Let us assume a new connection setup. When you click on OK button in 'PING Service Setting" dialog box you can see following (listview on the right side).

You can see that "PING" service consists of five services :

1. **Wait** (optional)
2. **Connect** (connect to network with defined COM port number)
3. **Ping**
4. **Wait** (optional)
5. **Disconnect** (disconnect from network)

These all services are available in **"Advanced"** view. You can edit (or choose another existing setting) all these services (except for disconnect) with double-click of left mouse button any time. **You have to create** (if not exist) **a new dial-up connection with name COM1 (connect using modem attached to COM1) !!!**
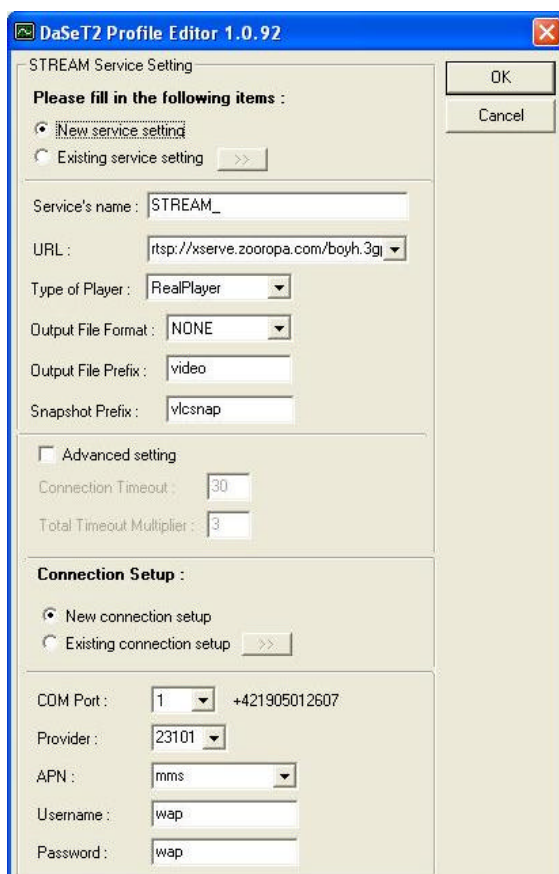
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Also you can edit (add or delete) :

"connect" service in main menu Setting/ Connection Setting and
"PING" service in Setting/ PING Setting.

STREAM

The measurement of access to remote stream server and monitoring of playback statistics. The RealPlayer or QuickTime player is used for playing the stream files (3gp, rm, etc.) from remote server and VLC player is used to open capture device (measurement of IPTV). The connection setup will be used for creating the connection to network. The "STREAM Service Setting" dialog box will display.

You can set up several items in this dialog box:

Service's name – service's name. You can find this setting (with this name) in main menu Setting/ Stream Setting. The same name is used for both "STREAM" and "Connection" service (new connection setup).

URL – location of a clip to be played in a format "**rtsp://**" (**dshow://** for IPTV)

Type of Player – player to be used for playing the stream files

Connection timeout – specifies the number of seconds to wait for the initial server connection on a streaming session.

Total Timeout Multiplier – specifies total playing time and total playing timeout. If the total timeout multiplier is =10, than total playing time is medialength and total playing timeout is computed as a product of medialength and total timeout multiplier Otherwise total playing time equals the total timeout multiplier and total playing timeout is triple of total timeout multiplier.

The next three parameters (**Output File Format, Output File prefix** and **Snapshot Prefix**) are optional for STREAM service. They are additional parameters for measurement of IPTV. Video signal from set-top-Box is transmitted into video capture device via SCART cable. VLC player is used for open video capture device and display incoming signal from STB. There is an option to use only a preview (*Output File Format is NONE*) of incoming signal or capture into one of format : *MPEG-1, MPEG-2, WMV, IMAGE* (sequence of frames). *Output File Prefix* is a part of whole Output's Filename (date and time is automatically added).

The measurement of availability of TV channels is a main goal of IPTV monitoring. We use our own IR blaster to automatically control of STB. To control if the TV channel changes correctly we need to compare the current state with the reference state. According to this, we have a database of reference frames (one frame for each TV channel).

These frames are stored in "C:\Program Files\DaSe2\Stream\Snapshot". Parameter *Snapshot Prefix* represents in fact Filename of reference file to be compared with snapshot files obtained after changing TV channel. Measurement of IPTV will be explained in more detail later.

You have two options:

1. *New service setting* – you are able to edit the items in a form
2. *Existing service setting* – you aren't able to edit these items. Use ">>" button for choosing existing service setting. The 'STREAM Setting" dialog box will display.
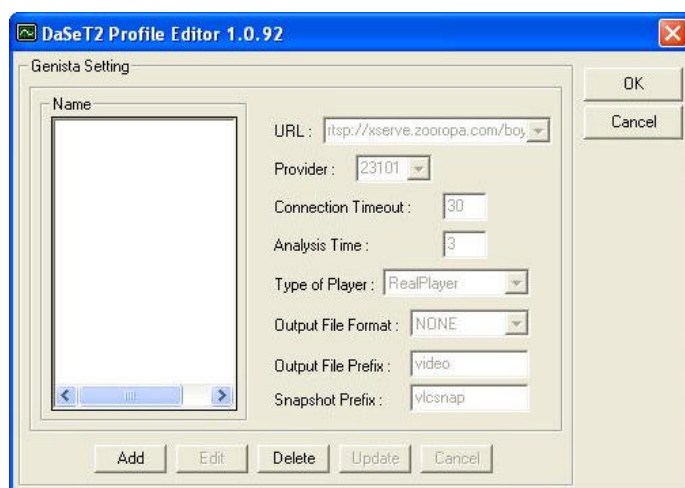
Now, there is no "Stream" Setting. There are the same items (the new item is provider) for editing as in the previous dialog box. Press "F2" key to edit "Name" item (First, you have to click on "Add" or "Edit" button).

Also you have to define "Connection Setup" (see "HTTP" service).

Let us assume a new stream service setting and a new connection setup. When you click on OK button in 'STREAM Service Setting" dialog box you can see following (listview on the right side).

Wait		10 seconds
Connect	+cgdcont=1,"IP","mms" (STREAM_ : *99***1#)	COM3 (23101)
Stream	rtsp://xserve.zooropa.com/boyh.3gp	3 (RealPlayer)
Wait		2 seconds
Disconnect		(23101)

You can see that "STREAM" service consists of five services :

1. **Wait** (optional)
2. **Connect** (connect to network with defined COM port number)
3. **Stream**
4. **Wait** (optional)
5. **Disconnect** (disconnect from network)

These all services are available in **"Advanced"** view. You can edit (or choose another existing setting) all these services (except for disconnect) with double-click of left mouse button any time. **You have to create** (if not exist) **a new dial-up connection with name COM 3 (connect using modem attached to COM3) !!!**

Also you can edit (add or delete) :

"connect" service in main menu Setting/ Connection Setting and
"Stream" service in Setting/ Stream Setting.

FTP

Connect to FTP server and download/upload tested file from/to server. The connection setup will be used for creating the connection to network. The "FTP Service Setting" dialog box will display.

You can set up several items in this dialog box:

> ***Service's name*** – service's name. You can find this setting (with this name) in main menu
> Setting/ FTP-Download/Upload Setting. The same name is used for
> both "FTP" and "Connection" service (new connection setup).
>
> ***URL*** – specifies the computer name or IP address of the remote computer
>
> ***Username*** – username to access FTP server
>
> ***Password*** – password corresponding to username
>
> ***Download File*** – specifies the remote file to be copied from FTP server to local computer
> (C:\Program Files\DaSet2\FTP\Temp)

> *Upload File* – specifies the local file (C:\Program Files\DaSet2\FTP) to be copied to FTP
> server
> *Timeout* – specifies the number of seconds to wait for the initial server connection.
> *RemotePath* – path on remote FTP server. Default value for DL is a **blank** (file to be
> downloaded is in root folder) and */Temp* for UL.
> *Mode* - PORT or PASV mode

You can test both download and upload (both checkboxes are checked) or separately download (only checkbox "Download File" is checked) and upload (only checkbox "Upload File" is checked).

You have two options:

3. *New service setting* – you are able to edit the items in a form
4. *Existing service setting* – you aren't able to edit these items. Use ">>" button for choosing existing service setting. The "STREAM Setting" dialog box will display.
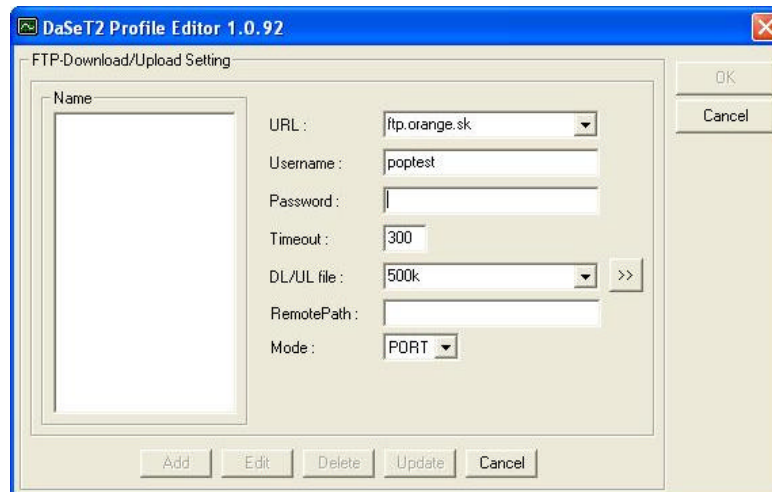
Now, there is no "FTP-Download/Upload" Setting. There are the same items for editing as in the previous dialog box. Press "F2" key to edit "Name" item (First, you have to click on "Add" or "Edit" button).

Also you have to define "Connection Setup" (see "HTTP" service).

Let us assume a new connection setup. When you click on OK button in "FTP Service Setting" dialog box you can see following (listview on the right side).

Wait		10 seconds
Connect	+cgdcont=1,"IP","mms" (FTP_ : *99***1#)	COM1 (23101)
FTP-Download	ftp.orange.sk	100k
Wait		10 seconds
FTP-Upload	ftp.orange.sk	100k
Disconnect		(23101)

You can see that "FTP" service consists of five services :

1. **Wait** (optional)
2. **Connect** (connect to network with defined COM port number)
3. **FTP-Download**
4. **Wait** (optional)
5. **FTP-Upload**
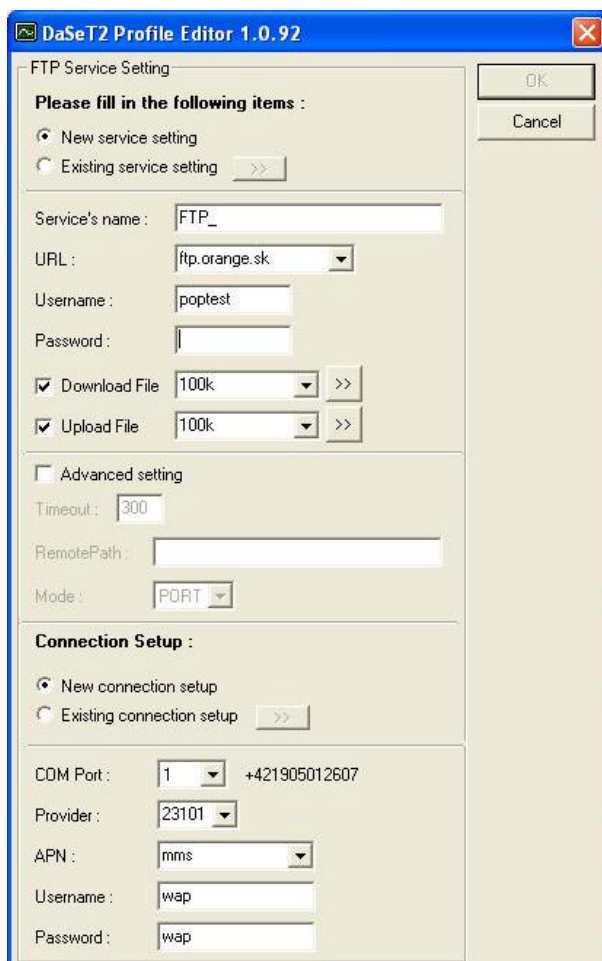6. **Disconnect** (disconnect from network)

These all services are available in **"Advanced"** view. You can edit (or choose another existing setting) all these services (except for disconnect) with double-click of left mouse button any time.
You have to create (if not exist) **a new dial-up connection with name COM1 (connect using modem attached to COM1) !!!**

Also you can edit (add or delete) :

"connect" service in main menu Setting/ Connection Setting and
 "FTP-Download/Upload" service in Setting/ FTP-Download/Upload Setting.

EMAIL

Send email to mailbox trough SMTP protocol and receive email which has just been sent from mailbox trough POP3 protocol. The connection setup will be used for creating the connection to network. The "FTP Service Setting" dialog box will display.

You can set up several items in this dialog box:

Service's name – service's name. You can find this setting (with this name) in main menu Setting/ EMAIL-Send/ Receive Setting. The same name is used for both "EMAIL" and "Connection" service (new connection setup).
From – specifies the email address who email is sent from
To – specifies the email address who the email is sent to
Subject – subject of the message
Body – body of the message
Attachment – insert a file as an attachment (empty editbox means no attachment)
Timeout – specifies the number of seconds to wait for the initial server connection

Outgoing mail setting :

SMTP Server **-** specifies the name or IP address of the SMTP Server
SMTP Authent. – item is checked if the authentication is necessary
SMTP Username - username to access mailbox
SMST Password – password corresponding to username

Incoming mail setting :

POP3 Server **-** specifies the name or IP address of the POP3 Server
Username - username to access mailbox
Password – password corresponding to username

Also you have to define "Connection Setup" (see "HTTP" service).

Let us assume a new connection setup. When you click on OK button in "EMAL Service Setting" dialog box you can see following (listview on the right side).

Wait		10 seconds
Connect	+cgdcont=1,"IP","mms" (EMAIL_ : *99***1#)	COM1 (23101)
Email-Send	dasetosk@daset.sk	smtp.daset.sk
Wait		20 seconds
Email-Receive	dasetosk@daset.sk	mail.daset.sk
Wait		2 seconds
Disconnect		(23101)

You can see that "EMAIL" service consists of seven services :

1. **Wait** (optional)
2. **Connect** (connect to network with defined COM port number)
3. **Email-Send**
4. **Wait**
5. **Email-receive**
6. **Wait** (optional)
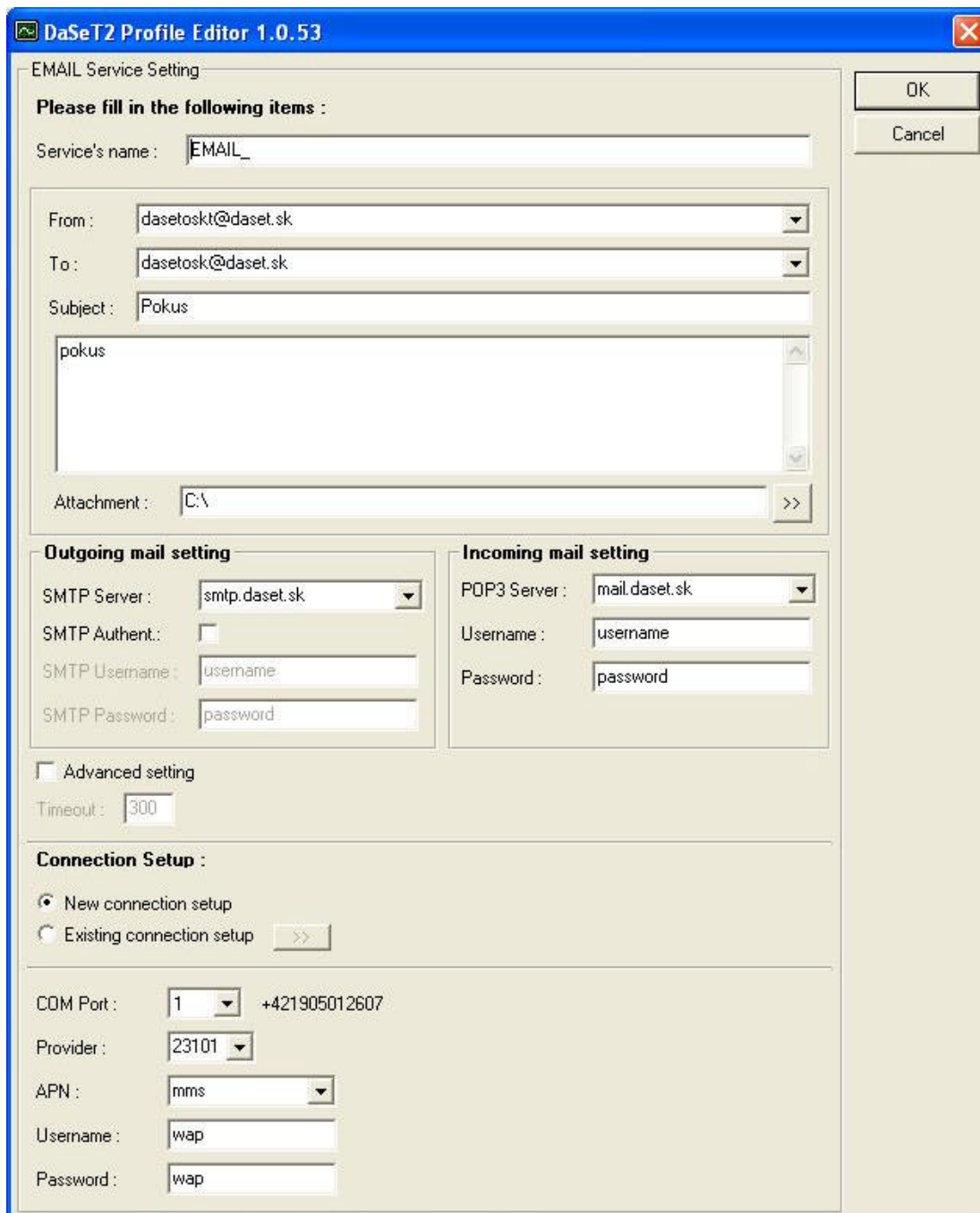7. **Disconnect** (disconnect from network)

These all services are available in **"Advanced"** view. You can edit (or choose another existing setting) all these services (except for disconnect) with double-click of left mouse button any time. **You have to create** (if not exist) **a new dial-up connection with name COM1 (connect using modem attached to COM1) !!!**

Also you can edit (add or delete) :

    "connect" service in main menu Setting/ Connection Setting and
    "Email-Send/Receive" service in Setting/ Email-Send/Receive Setting.

IPTV

The measurement of availability of TV channels is a main goal of IPTV monitoring. We use our own IR blaster to automatically control of STB. IPTV monitoring consists of two individual services. ***IRDA***, as the first service, automatically control of STB (change TV channel) and ***STREAM*** *service* is used to open capture device and display incoming signal from STB. Video signal from STB is transmitted into video capture device via SCART cable. To control if the TV channel changes correctly we need to compare the current state with the reference state. According to this, we have a database of reference frames (one frame for each TV channel). These frames are stored in "C :\Program Files\DaSet2\Stream\Snapshot". When you choose IPTV service from the list of services ,the "IPTV Service Setting" dialog box will display.
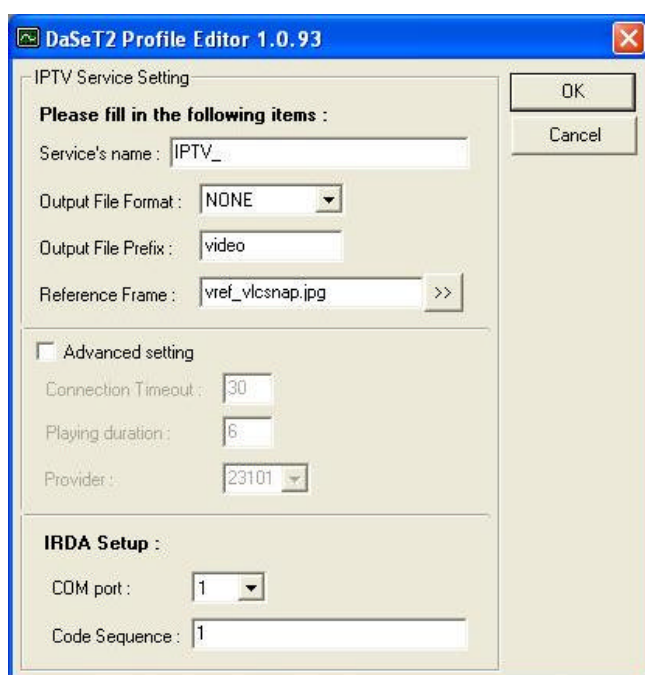
As you can see, the top part of dialog box represents in fact STREAM service. The missing parameters (Type of Player =***VLC player*** and URL= ***dshow://***) are automatically added. These values exactly identify measurement of IPTV.

You can set up several items in this dialog box:

> ***Service's name*** – service's name. You can find this setting (with this name) in main menu
> Setting/ Stream Setting. The same name is used for both "*IPTV*"
> and "*IRDA*" services.
> ***Output File Format*** – there is an option to use only preview (NONE) or capture signal
> from STB into one of format (MPEG-1, MPEG-2, WMV, IMAGE
> –what means sequence of frames)
> ***Output File Prefix*** - is a part of whole Output's Filename (date and time is automatically
> added)

Reference Frame - Filename of reference frame to be compared with snapshot files obtained after changing TV channel (to control if the TV channel changes correctly)

Connection timeout – specifies the number of seconds to wait for opening capture device.

Playing Duration – specifies total playing time.

Provider - MMC+MNC network code (23101 for Orange Slovakia)

The **IRDA** setup is the second part of this dialog box. As was said, it ensures automatically control of STB.

You can set up two parameters for each IRDA setting:

COM port – serial com port used for IR-blaster connection. Value 1 is usually used.

Code Sequence – sequence of IrDa codes to be sent to STB. These code correspond to buttons on remote control. Use a *comma* to separate the individual codes.

For more details about IRDA setting see description of services in Advanced View.

Let us assume parameters as are displayed in dialog box above. When you click on OK button in "IPTV Service Setting" dialog box you can see following (listview on the right side).

Service	Setting	Value
Wait		10 seconds
Connect	iptv (Mock : mock)	COM1 (23101)
Irda	IPTV_	1
Stream	dshow://	6 (VLC player)
Wait		2 seconds
Disconnect		(23101)

You can see that "IPTV" service consists of six services :

1. **Wait** (optional)
2. **Connect**
3. **Irda**
4. **Stream**
5. **Wait** (optional)
6. **Disconnect**

As you can see, there are two services (Connect and Disconnect) automatically added. In general, *Connect* represents the beginning and *Disconnect* ending of certain service (FTP, STREAM, EMAIL,HTTP etc.). According this, the same schema is used for IPTV. There is a special Connection Setting's Name= Mock with special DialUpNumber=mock used only for IPTV services. This connection setting is automatically created.

All these services are available in **"Advanced"** view. You can edit (or choose another existing setting) these services (except for disconnect) with double-click of left mouse button any time.

Also you can edit (add or delete) :

> "Stream" service in Setting/ Stream Setting and
> "Irda" service in Setting/IRDA Setting.

There are some other advanced parameters for IPTV located in file "C:\Program Files\Daset2\Load.ini". Please, do not change these parameters, it is only for information.

There is an example of these parameters :

> *[CaptureCArd]*
> *NumberOfItem=5*
> *Item0=:dshow-vdev=Hauppauge WinTV-HVR 713X BDA Analog Capture*
> *Item1=:dshow-adev=none*
> *Item2=:dshow-size=720x576*
> *Item3=:dshow-chroma=UYVY*
> *Item4=:dshow-fps=25.000000*
> *Item5=:dshow-video-input=1*
> *BannerWidthPosition=146*
> *BannerHeightPosition=451*
> *BannerThreshold=30*
> *BannerBlackWindowThreshold=1*
> *BannerWait=1.5*
> *EPGThreshold=4.9*
> *BlackWindowThreshold=1100*
> *NotAvailableThreshold=700*
> *SnapShotStopTime=5*
> *LightLiveMode=7.2*

The first seven items (*NumberOfItem, …, Item5*) define capture device and its additional parameters for correct opening of video card. There is a banner (rectangle) consists of channel logo, channel number, EPG after change TV channel. *BannerWidthPosition* and *BannerHeightPosition* define the left top point of banner. Reference frame is compared with current snapshots (every sixth frame is used) obtained after change TV channel. *BannerThreshold* is max.value when we can say that the correct TV channel was displayed. As was mentioned, we have a sequence of frames after change TV channel. *SnapShotStopTime* define time in seconds when this process finishes. Each of these frames is compared with reference frame.

There is compared not only banner, but background too, to be able to define zapping time. We can define the zapping time according to the number of frame where the banner is correct displayed and background is not black. *BannerBlackWindowThreshold* is max. value when we can say that background is still black. Because of IRDA a Stream services are separate services, there is a certain time between finishing of IRDA and beginning of Stream services. To be able to calculate "zapping time" we have to know this time. Zapping time is calculated as sum of *BannerWait* , ConnectionTime to open capture device and time (calculate from number of frame) when the banner of TV channel is displayed OK and background is not black.

Measurement of IPTV provides additional functions as are EPG, LightLiveMode checking and "Black screen" or "TV channel is not available" detection. There are necessary to have the references frames to be able to detect these causes. Information about EPG and LightLiveMode are located in banner. "LightLiveMode" is a special cause, when TV channel is available, but there is missing EPG information ***EPGThreshold, BlackWindowThreshold, NotAvailableThreshold*** and ***LightLiveMode*** are threshold value to identify these causes.

All these values (for each of parameters) results from used video capture device, STB and cable to transmit signal from STB to video card.

### 3.2   Description of services in Advanced View

The Advanced View has more options of creating measurement profile than the standard view. There are more services you can use. You have already seen most of them as the part of services in Standard view. However, there are another services which are not visible in Standard View and will be explained later.

I recommend to use the Standard View for all common services such as SMS, MMS, WAP, HTTP, PING, STREAM , FTP, EMAIL and IPTV known from Standard View. You have an option to set up all parameters in one form there and can be sure that the created profile will be correctly supported by DaSeT tester application. You can use the item **Add Service** in main menu File to add these services without switching to Standard View. The "Add Service" dialog box will display.
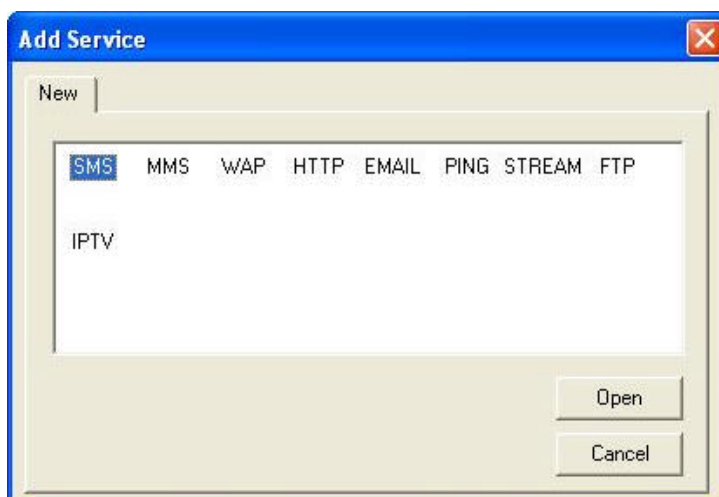
CONNECT

This service is inseparable part of all services in Standard View except for SMS. These services usually begin with this "connect" and have to finish with "disconnect" service. *You have to use "disconnect" after each "connect"!!!.* The "Connection Setting" dialog box will display.
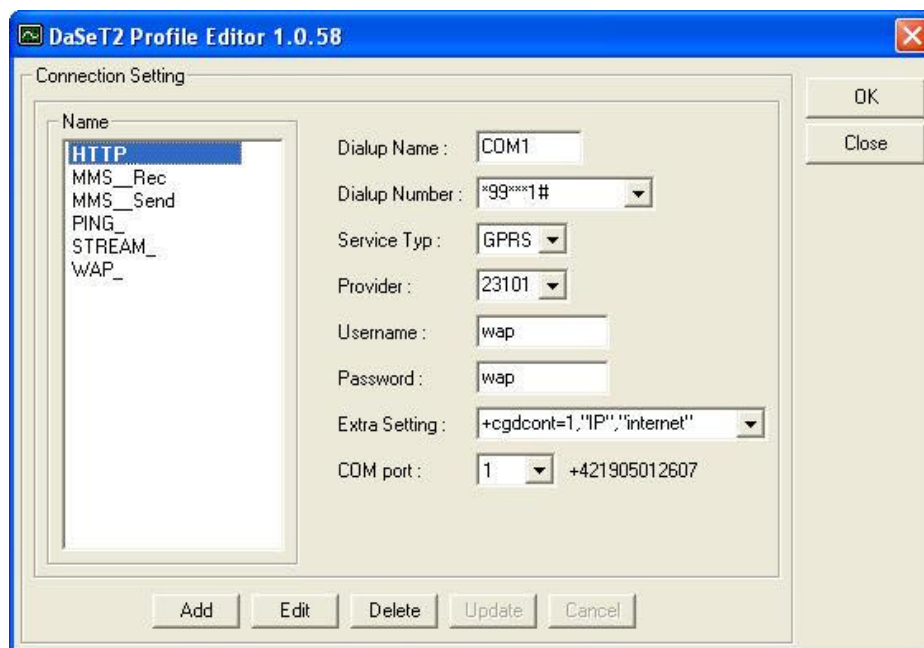
There is the list of connection settings identified by its name. You can choose one of them or add new one. You can set up several parameters for each connection setting:

Dialup Name – dial-up name to be used for connection (use Dial-up Name "COM1" to connect using COM port number "1")

Dialup Number – *99***1# for GPRS service type and specified number (+421905927927 in Slovakia) for CSD

Service type – GPRS or CSD

Provider – MMC+MNC network code (23101 for Orange Slovakia)

Username – username for network access

Password – password corresponding to username

Extra setting - extra initialization command for modem including APN ("mms")

COM port – COM port number to be used for connection (dial-up using this COM port)

You can add, edit or delete (**be carefully, it could be used in profile !!!**) an individual connection setting with buttons in form. First, you have to click on "Add" or "Edit" button to be able to edit items. Press "F2" key to edit "Name" item.

Be carefully, **text "unknown number" can not appear next to Combobox for COM ports !!!.** You can use "Operator Setting" in main menu "Setting" or click on text "unknown number" to edit MSISDNs.

Let us assume the connection setting "HTTP_". When you click on OK button in "Connection Setting" dialog box you can see following (listview on the right side).

| Connect | +cgdcont=1,"IP","internet" (HTTP_ : *99***1#) | COM1 (23101) |

You can edit (or choose another existing setting) this service with double-click of left mouse button any time. **You have to create** (if not exist) **a new dial-up connection with name COM1 (connect using modem attached to COM1) !!!**
Also you can edit (add or delete) the connection settings in main menu Setting/Connection Setting . The button "OK" is disabled in this case.

DISCONNECT

There is necessary to use this service after each "connect" service. This service is automatically add to profile without prompt for approval.

| Disconnect | | (23101) |

You can delete this service from profile by "delete" key.

LAN set

This service is very similar to "connect" service. It can be used instead of "connect" service. The "connect" service defines DIALUP connection and the "LAN set" service defines LOCAL AREA CONNECTION to be used for connection. The "LAN Enable Setting" dialog box will display.
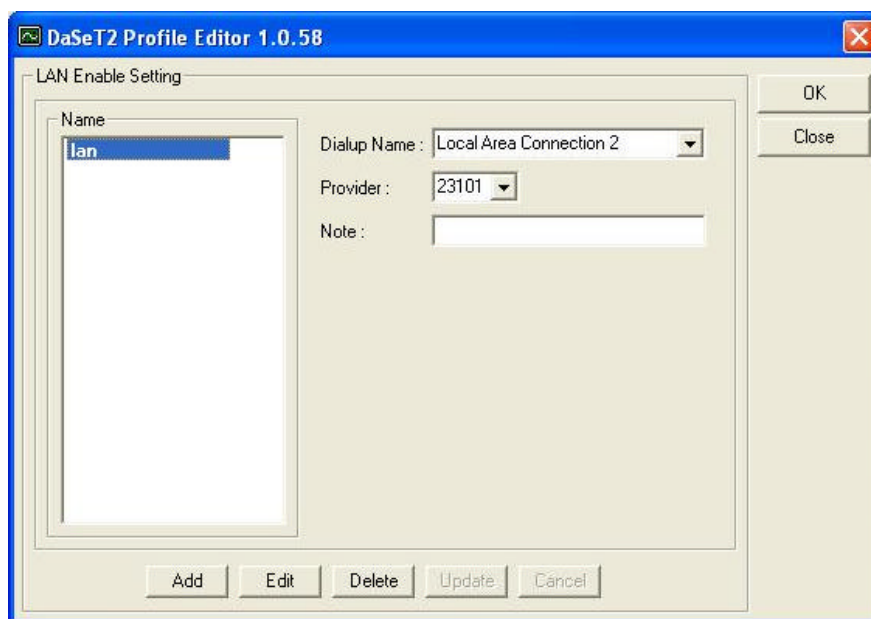
There is the list of LAN Enable settings identified by its name. You can choose one of them or add new one. You can set up several items for each LAN setting:

> *Dialup Name* – LAN or High-Speed Internet Name
> *Provider –* MMC+MNC network code (23101 for Orange Slovakia)
> *Note* – your notes

You can add, edit or delete (**be carefully, it could be used in profile !!!**) an individual LAN setting with buttons in form. First, you have to click on "Add" or "Edit" button to be able to edit items. Press "F2" key to edit "Name" item.
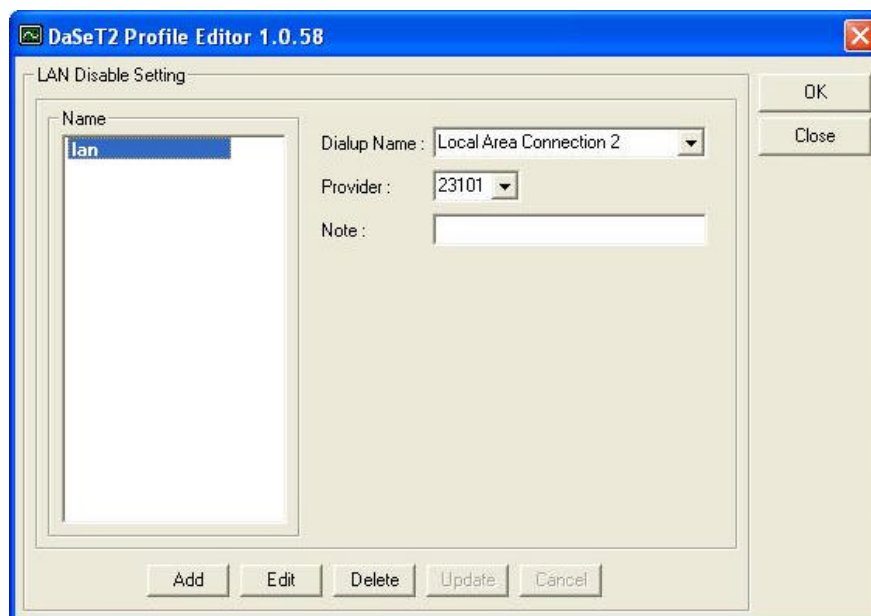
Let us assume the LAN Enable Setting "lan". When you click on OK button in "LAN Enable Setting" dialog box you can see following (listview on the right side).

You can edit (or choose another existing setting) this service with double-click of left mouse button any time. Also you can edit (add or delete) the LAN settings in main menu Setting/LAN Enable/Disable Setting . The button "OK" is disabled in this case.

LAN cls

You have to use "LAN cls" after each "LAN set" (analogous to "disconnect" service). The "LAN Disable Setting" dialog box will display.

You have to choose the same LAN Setting as you have chosen in LAN set !!!.

You can add, edit or delete (**be carefully, it could be used in profile !!!**) an individual LAN setting with buttons in form. First, you have to click on "Add" or "Edit" button to be able to edit items. Press "F2" key to edit "Name" item.
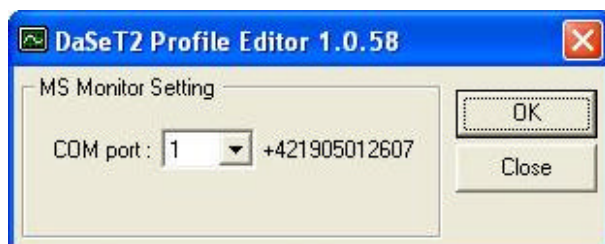
Let us assume the LAN Disable Setting "lan". When you click on OK button in "LAN Disable Setting" dialog box you can see following (listview on the right side).

You can edit this service with double-click of left mouse button any time. Also you can edit (add or delete) the LAN settings in main menu Setting/LAN Enable/Disable Setting . The button "OK" is disabled in this case.

IDLE

Getting of general network information (LAC, cell, RXLev etc.) from modem in Idle mode. This service would be used at the beginning of measurement profile, usually after "Trigger" service. It can not be used between "connect" and "disconnect" service because COM port is already used for Dialup connection at this moment. The "MS Monitor Setting" dialog box will display.

You need to choose only the COM port number. Be carefully, **text "unknown number" can not appear next to Combobox for COM ports !!!.** You can use "Operator Setting" in main menu "Setting" or click on text "unknown number" to edit MSISDNs.
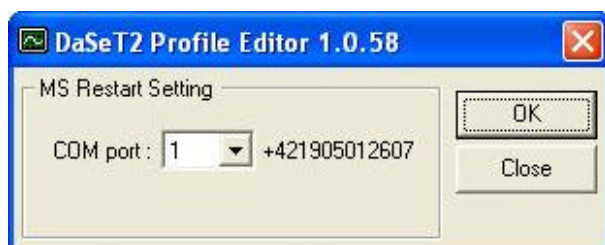
Let us assume COM port "1". When you click on OK button in "MS Monitor Setting" dialog box you can see following (listview on the right side).

You can edit this service with double-click of left mouse button or delete from profile by "delete" key any time.

RESTART

Restart modem attached to specified COM port. You can not restart modem if this COM port is already used, e.g. for Dial-up connection. So, it can not be used between "connect" and "disconnect" service. The "MS Restart Setting" dialog box will display. You need to choose only the COM port number.

Be carefully, **text "unknown number" can not appear next to Combobox for COM ports !!!.** You can use "Operator Setting" in main menu "Setting" or click on text "unknown number" to edit MSISDNs.
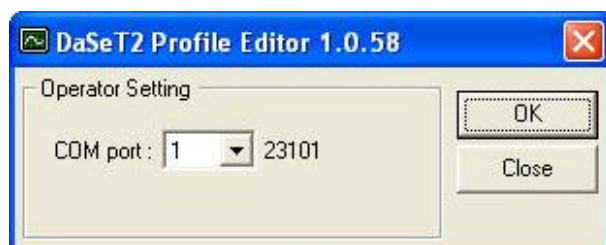
Let us assume COM port "1". When you click on OK button in "MS Restart Setting" dialog box you can see following (listview on the right side).

MS Restart		COM 1

You can edit this service with double-click of left mouse button or delete from profile by "delete" key any time. This service is not very often used.

OPERATOR

Select operator on SIM card inserted in modem attached to specified COM port. This is necessary for "MULTIIMSI" card which has more than one MSISDN (from different operators). For roaming test is required before start of measurement select roamed operator. This service would be used at the beginning of measurement profile. The "Operator Setting" dialog box will display.

You need to choose the COM port number. You can see selected operator code next to Combobox for COM port. If you want to different operator you have to define it in main menu "Setting" or click on operator code. Be carefully, **text "unknown" can not appear next to Combobox for COM port !!!.**

Let us assume COM port "1". When you click on OK button in "Operator Setting" dialog box you can see following (listview on the right side).

Operator	23101	COM 1

You can edit this service with double-click of left mouse button or delete from profile by "delete" key any time.

IRDA

Change TV channel on STB. We use our own IR-blaster to automatically control of STB. The "IRDA Setting" dialog box will display.
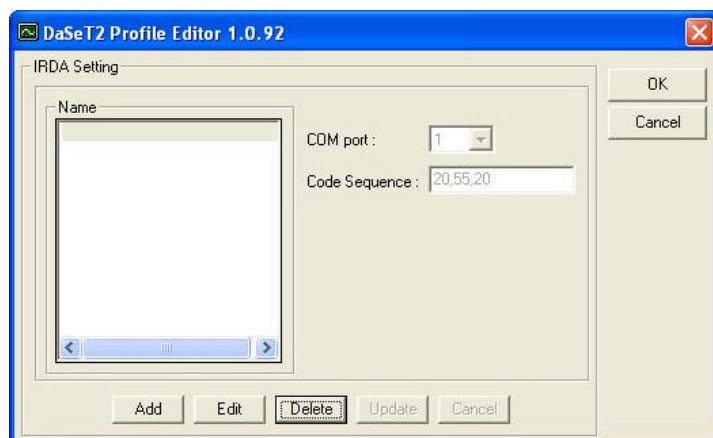
Now, there is no "IRDA" Setting. Use "Add" button to add new setting.
You can set up two parameters for each IRDA setting:

> *COM port* – serial com port used for IR-blaster connection. Value 1 is usually used.
> *Code Sequence –* sequence of IrDa codes to be sent to STB. These code correspond to buttons on remote control. Use a ***comma*** to separate the individual codes.

There is an example of list of codes for SAGEM STB offered by Orange company :

'0 - 0
'1 - 1
'2 - 2
'3 - 3
'4 - 4
'5 - 5
'6 - 6
'7 - 7
'8 - 8
'9 - 9
'10 - P+
'11 - P-
'12 - on/off
'13 - OK
'14 – arrow left
'15 – arrow right
'16 – arrow up

'17 – arrow down
'18 - menu
'19 - R
'20 - ?
'21 - i
'22 - Q
'23 - <<
'24 - >>
'24 - stop
'26 – pause/play
'27 - record
'28 - volume -
'29 - volume +
'30 - TV
'31 - VOD
'32 - G
'33 - Mute
'34 – red button (A)
'35 – green button (B)
'36 – yellow button (C)
'37 – blue button (D)

Sometimes, we need to define certain time between two codes. Therefore, there are some special codes:

'50 - pause 0.5 sec
'51 - pause 1 sec
'52 - pause 2 sec
'53 - pause 5 sec
'54 - pause 10 sec
'55 - pause 20 sec

If you want to choose channel number *15*, the correct sequence code is *1,50,5* what means press button 1, wait for 0.5 sec. and press button 5.

Let us assume a new IRDA setting for channel 1 (sequence code is 1)". When you click on OK button in "IrDA Setting" dialog box you can see following (listview on the right side).

| Irda | channel 1 | 1 |

You can edit (or choose another existing setting) this service with double-click of left mouse button any time. Also you can edit (add or delete) the IRDA settings in main menu Setting/IRDA Setting . The button "OK" is disabled in this case.

TRIGGER

See description of services in Standard View.

LOOP

See description of services in Standard View.

WAIT

See description of services in Standard View.

UPLOAD

See description of services in Standard View.